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## **Abstract**

## A Structured Peptide Scaffold for Displaying Turn Libraries on Phage

The invention is directed to a model system for structure-activity analysis of peptide or protein molecules involved in important biological processes. Provided by the invention are combinatorial peptide libraries comprising disulfide-constrained cyclic peptides with sequences favorable for energy stabilized conformations. A preferred embodiment of the invention is directed to peptides containing  $\beta$ -turn tetrapeptide that form structured  $\beta$ -hairpin scaffold in solution. Methods of selecting and using such peptides are provided herein, which are useful for mimicking in vivo molecular interactions and designing therapeutic agents. Thus, the invention has profound utility for biological studies and drug development.